Understanding the health risk from exposure to low levels of 1,4-dioxane in drinking water

Michigan Department of Health and Human Services (MDHHS)
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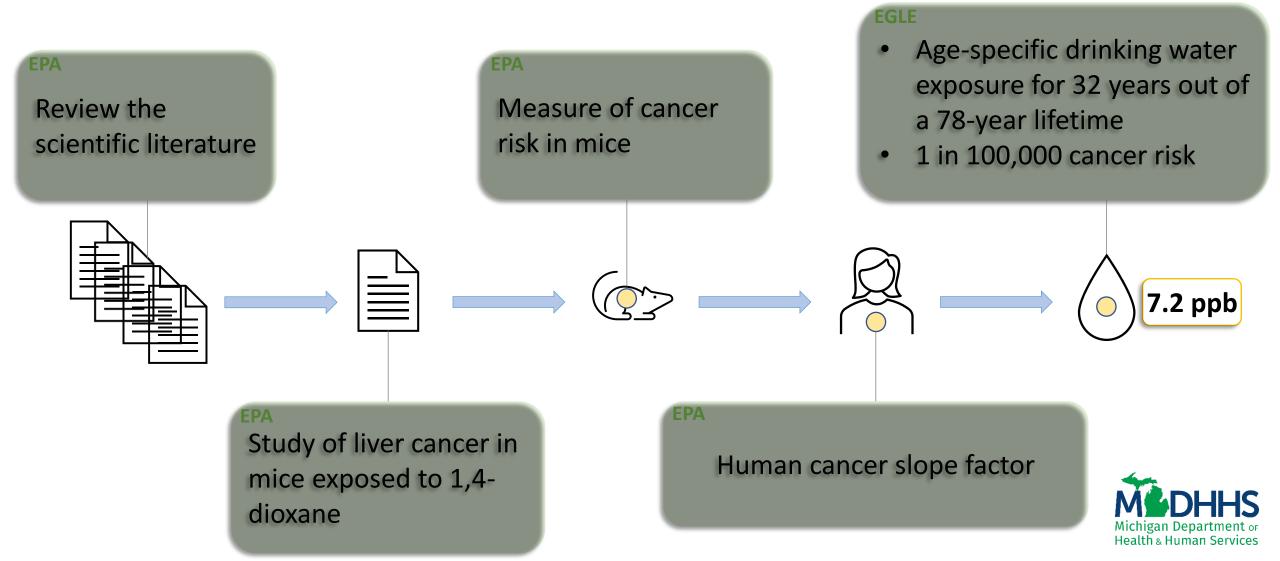


What are screening levels?

- Conservative values used to determine whether exposure poses a potential risk, and whether any follow up actions are needed
- EGLE drinking water criteria are regulatory values used for enforcement purposes.
- Exposure above a screening level/criteria does not necessarily mean that a person will experience health effects
 - Based on conservative exposure assumptions
 - Protective of the whole population, including sensitive individuals



1,4-Dioxane EGLE drinking water criteria



Cancer risk

EPA recommended

maximum cancer

Cancer Risk

1 in 10,000 —

1 in 100,000—

Water Concentration

e Drinking \	EGLE Drinking Water Criteria	EPA Regional Screening Level (RSL)	EPA lifetime exposure concentration
Jioxane	→	46 ppb	35 ppb
-Dic	→ 7.2 ppb	4.6 ppb	3.5 ppb
1,4	→	0.46 ppb	0.35 ppb
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risk range 1 in 1,000,000 — → O.46 ppb 0.35 ppb

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Exposure to low levels of 1,4-dioxane in drinking water

- Noncancer health effects
 - EPA noncarcinogenic screening level = 57 ppb
 - Threshold below which noncancer health effects are not expected
- Cancer
 - No threshold, just lower levels of risk as exposure concentration decreases
- Exposure below 7.2 ppb would pose a cancer risk of less than 1 in 100,000
 - Not intended to represent actual risk to the community

1 in 100,000 ← 0.13 in 100,000 or ← 1.3 in 1,000,000

Concentration

Cancer Risk

— 7.2 ppb

 $-1 \, \text{ppb}$

Health & Human Services

Questions?

 Please feel free to contact us if you have any questions related to 1,4dioxane and health.

MDHHS Division of Environmental Health (DEH)

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